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FROM THE PRESIDENT



Canada — with its expansive and beautiful ecosystems — is considered a land of plenty. But is plenty enough for all its wildlife to thrive?

Our Living Planet Report Canada (LPRC) 2020 reveals that since 1970, populations of Canadian species assessed as at risk nationally have plunged by an average of 59 per cent. Those assessed as globally at risk have seen their Canadian populations fall by an average of 42 per cent.

Clearly, Canada still has some work to do to protect its most threatened populations from the multiple threats they face.

But we now know how to do this. Indigenous knowledge systems and leadership are key to just and effective conservation in Canada. Protected areas, ecosystem restoration and sound management are proven to help species recover. And nature-based climate solutions mitigate the effects of a warming world while safeguarding wildlife by providing the habitat they need to thrive.

It's easy to get discouraged by bad news about the environment, especially with COVID-19 putting the world into even more of a tailspin. But when we all come together — as individuals, organizations, communities, governments and businesses — we can effect real change with innovative and inspiring solutions.

Megan Leslie President and CEO World Wildlife Fund Canada

WILDLIFE TRENDS IN CANADA

Canada is home to a wide array of wildlife — from iconic species like the Atlantic walrus and barren-ground caribou to lesser-known but equally important ones like the Vancouver Island marmot and wood turtle. But their habitats — their *homes* — are increasingly under threat from human-induced pressures that threaten their very survival.

Hundreds of these species — including mammals, birds, amphibians and reptiles — are now at risk of extinction. To prevent further loss, we know that meaningful conservation action is required. But knowing which species are under threat hasn't been enough.

WWF-Canada's Living Planet Report Canada 2020 analyzed population trends for native vertebrate species and discovered that populations of at-risk species have been plummeting. The 139 species in our study currently assessed as at risk nationally by the scientific Committee on the Status of Endangered Wildlife in Canada (COSEWIC) have seen their populations decline by 59 per cent, on average, from 1970 to 2016.

We already know wildlife face multiple threats, ranging from pollution and resource overexploitation to the increasing impacts of climate change. But our new study has found COSEWIC-assessed at-risk species face an average of five threats, meaning that conservation actions targeting only one threat at a time will likely not be successful for wildlife recovery.

Canada also hosts over 100 vertebrate species of global conservation importance — nearly half were included in our study. Populations of vertebrate species currently assessed as at risk globally by the International Union for Conservation of Nature (IUCN) fell, on average, by 42 per cent in Canada from 1970 to 2016.

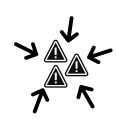
The Living Planet Report Canada (2020) digs deeper into this data, illuminates these trends through species highlights, and offers concrete conservation actions, such as nature-based climate solutions, that can help biodiversity thrive while reducing carbon emissions.



KEY FINDINGS



Populations of Canadian species assessed as at risk nationally by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) have declined by 59 per cent, on average, from 1970–2016.



Conservation efforts targeting single threats are unlikely to be successful, so new approaches tackling multiple threats are needed to stop wildlife loss in Canada.



At-risk species in Canada face an average of five threats, including the accelerating threat of climate change.



Populations of species of global conservation concern — assessed as threatened on the IUCN Red List — also have declined in Canada by 42 per cent, on average, from 1970–2016.



Nature-based climate solutions — like protected areas and restoration — can help to stop this wildlife loss by addressing multiple threats to biodiversity while reducing climate change by sequestering and storing carbon in natural ecosystems.



CURRENT STATE OF CANADIAN WILDLIFE

The Canadian Living Planet Index (C-LPI) examines the average trend in population abundance for 883 native vertebrate species in Canada — about half of the country's total vertebrate species . In our analysis, birds and fish account for 44 per and 41 per cent of species respectively, while mammals comprise 11 per cent and amphibians and reptiles make up the final four per cent.

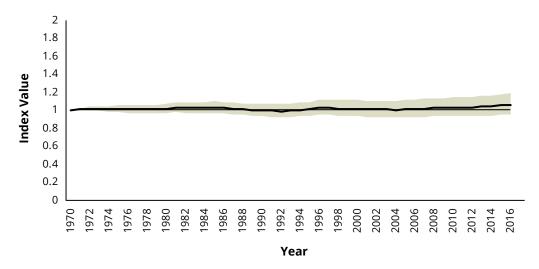
From 1970 to 2016, the national Living Planet Index reports a **near-stable trend of six per cent.** But closer examination of the C-LPI data reveals that human activity has considerably shifted the natural equilibrium of ecosystems, resulting in both a catastrophic loss of species and, in some cases, significant increases. Forty-eight per cent of species have increasing trends on average, and five per cent are considered stable (within five per cent of the baseline). But 47 per cent of the vertebrate species included in the analysis have dramatically declined in abundance from 1970 to 2016.

This report focuses on species at risk of extinction because they are in immediate need of conservation attention. To prevent their imminent loss in Canada, we need to better understand the magnitude and rate of their population trends, identify the leading threats driving their declines and work to determine the necessary conservation actions for their recovery.

In interpreting the results of the C-LPI, keep in mind that we use a benchmark year of 1970 as the basis of our analysis of trends in wildlife populations, largely due to limited data availability before that date. However, the timeframe of 1970 to 2016 represents a comparatively small and recent analysis of trends in Canada's wildlife populations.

For some species in the C-LPI, a baseline year of 1970 may capture a period of especially low population numbers so that an increase from 1970 doesn't necessarily mean the population has reached historical levels. The consideration of a baseline prior to 1970 is likely to reflect a greater loss of wildlife in Canada — consistent with the growing evidence that biodiversity, globally, is declining faster than at any other time in human history.

A good example of this is the swift fox, which was abundant in the 1800s but became extirpated (locally extinct) in Canada by the 1930s. Since the 1970s, dedicated captive breeding and reintroduction programs helped the swift fox population grow to 647 by 2009. While this is a success because it's an increase in abundance since 1970, the species is still considered threatened because of its small population size and highly restricted distribution.



The Canadian LPI shows an average near-stable trend of six per cent (confidence interval range: -5 to 19 per cent) between 1970 and 2016. Trend in population abundance for 3,781 population time-series of 883 native vertebrate species.



ETHICAL SPACE AND BIODIVERSITY CONSERVATION



BY DANIKA BILLIE LITTLECHILD

ASSISTANT PROFESSOR, LAW AND LEGAL STUDIES, CARLETON UNIVERSITY, ERMINESKIN CREE NATION, MASKACIS, TREATY NO. 6 TERRITORY, CO-CHAIR, INDIGENOUS CIRCLE OF EXPERTS

"Ethical space is about elevating Indigenous systems to a position of equity. There is a common refrain that conservationists would use when they would talk about Indigenous Peoples in protected areas, or their rights and roles in conservation. We wanted to shift everyone out of that default mode and elevate Indigenous systems to a position of equity with non-Indigenous systems, and have Indigenous Peoples be recognized as experts of their own knowledge systems. We didn't want a scenario

where we needed non-Indigenous scientists or experts to "translate" what we would say to make it legitimate somehow.

This allows both systems to function on their own and with their own integrity without having to alter themselves. Conservation issues go through these respective systems and are brought into ethical space for "cross-validation."

MULTIPLE KNOWLEDGE SYSTEMS

Indigenous-led conservation is vital to advancing reconciliation and renewing relationships with First Nations, Métis and Inuit. Indigenous People have been stewarding these lands and waters for millennia, which is why it's essential to support Indigenous knowledge, governance, sovereignty and leadership on these issues.

One of the first steps toward making conservation in Canada equitable and just involves increasingly recognizing different knowledge systems — both Indigenous and non-Indigenous — and how they can contribute to the understanding of nature and our relationships with it.

The Canadian Living Planet Index is part of a scientific knowledge system that relies on a specific form of quantitative data. To consider other ways of knowing in the 2020 LPRC, we have included a series of species stories further exploring Canadian wildlife trends from the perspective of both Indigenous and non-Indigenous knowledge systems. Known as "two-eyed seeing," it combines the strengths of both perspectives for a more holistic and integrative approach to conservation.





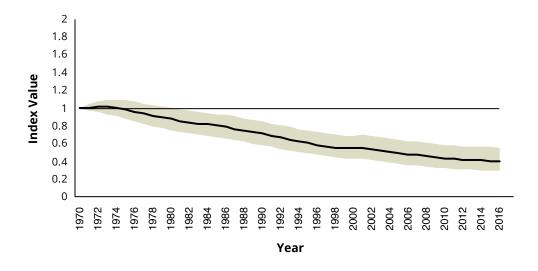
NATIONALLY ASSESSED AT-RISK SPECIES

Of the 883 vertebrate species assessed in the Canadian Living Planet Index, 139 have been scientifically assessed as at risk of extinction by COSEWIC. Populations of these Canadian species have **declined by 59 per cent**, **on average**, **from 1970–2016**.

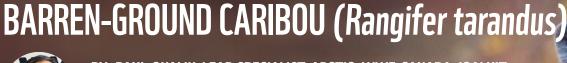
As this is an average, some species have experienced extreme declines, while others are flourishing relative to 1970. The little brown bat, for example, has declined by 99 per cent in the C-LPI, while the sea otter, once extirpated in Canada, has increased by an average of well over 100 per cent. Still, both remain at risk of extinction.

Not all species identified as at risk by COSEWIC are listed under the federal Species at Risk Act (SARA) — 30 per cent of species included in the C-LPI for

nationally assessed at-risk species lack SARA protections. (The discrepancy between the two lists is that the former is based entirely on science while the latter also includes socioeconomic considerations.) While it is anticipated that the LPI for this group of species would show a declining trend, understanding the extent of their declines helps determine appropriate conservation efforts.



The C-LPI of COSEWIC-assessed at-risk species in Canada shows an average decline of 59 per cent (confidence interval range: -70 to -44 per cent) between 1970 and 2016. Trend in population abundance for 629 population time-series of 139 native vertebrate species. The Species at Risk Act was enacted in 2002.





BY: PAUL OKALIK, LEAD SPECIALIST, ARCTIC, WWF-CANADA, IQALUIT

COSEWIC Status: IUCN Red List Status:

It's sad that we barely see any of the beautiful *tuktu* (barren-ground caribou) in the country where I grew up. From the earliest days that I can remember, I would go out with family during our school breaks to go caribou hunting. When I was eight years old, I got my first caribou, and the custom was for the parents to host a big feast in honour of the first big animal that was caught — caribou were always a stable and staple part of our diet. It was such a joyous time.

To protect these animals, we're doing our part on [Baffin] Island, where harvesting is heavily regulated

Threatened Vulnerable

through community quotas. But their habitat is unprotected, and it needs to be protected so that the caribou have a place they can call home — where there's no development.

It's really important that the youth learn our customs from their parents so they can continue on with our traditions, but with the heavy regulations we face, it's a challenge. The sooner we can protect their habitat, the healthier the populations will be, and I'll be able to bring my own children to enjoy the beautiful land we have and watch them harvest their own tuktu.

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NORTH ATLANTIC RIGHT WHALE (Eubalaena glacialis)

COSEWIC Status: Endangered IUCN Red List Status: Critically Endangered

The North Atlantic right whale is an example of how interacting threats — including the indirect effect of climate change — can negatively affect species abundance. Right whales are extremely dependent on copepods (tiny crustaceans) and follow them wherever they're highly concentrated — in this case, from the Bay of Fundy to the Gulf of St. Lawrence.

But oceanographic shifts from climate change have shifted the endangered whales to an area that, prior to 2017, did not have measures in place to reduce threats such as ship strikes and

entanglement in fishing gear.

Previous efforts went into moving shipping lanes and protecting the whales' critical habitat in coastal waters off Nova Scotia and the Bay of Fundy, where they historically congregated. As they increasingly frequent the Gulf of St. Lawrence, their vulnerability to these threats has increased dramatically in

The species was hunted to the brink of extinction as a result of commercial whaling, and their population size,

recent years.

which was once in the thousands, dropped to just 411 whales in 2018.



THREATS TO NATIONALLY ASSESSED AT-RISK SPECIES

Despite knowing the major drivers of species decline, many remain pervasive and have accelerated since 1970. Identifying and quantifying these threats can help guide conservation actions that maximize species recovery.

COSEWIC-assessed at-risk species are affected by multiple, cumulative pressures — five on average. In fact, eighty-seven per cent of species were impacted by more than one threat.

Given that most populations, especially those designated as at risk of extinction, are affected by multiple stressors, it's important to understand the complexity of interacting drivers of population trends.

The cumulative and cascading effects of several threats may be more detrimental than individual threats — for example, if a population is already facing habitat loss, this can be compounded by the effects of climate change that may further restrict its range.

It's also important to note that all of the eleven threat categories are inherently tied to land use and land-use change — including human activities like urbanization, development of coastal regions, and impacts from industrial sector activities such as energy production and mining. The increasing threat of climate change can intensify these stresses and act as a catalyst of further environmental change. In turn, the loss and degradation of ecosystems through both land-use change and climate change releases carbon into the atmosphere, further accelerating the climate crisis.

THREATS



OVEREXPLOITATION



INVASION AND DISEASE



POLLUTION



CLIMATE CHANGE



URBAN DEVELOPMENT



TRANSPORT



HUMAN DISTURBANCE



AGRICULTURAL ACTIVITY



ENERGY PRODUCTION



SYSTEM MODIFICATION

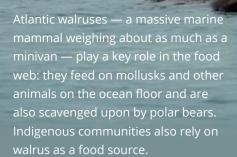


GEOLOGICAL EVENTS

ATLANTIC WALRUS (Odobenus rosmarus rosmarus)

COSEWIC Status: IUCN Red List Status:

Special Concern Near Threatened



Unsustainable hunting by settlers led to the extinction of the walrus population occupying coastal habitats of the Atlantic provinces

by the mid-1800s. Climate change is anticipated to negatively impact the two remaining Atlantic walrus populations, which are otherwise currently considered to have relatively stable trends.

As sea ice continues to shrink in a warming world, new routes for shipping and oil tankers are expected to open. This expanding human encroachment means that vessels are likely to pass more closely to the sensitive breeding, feeding and haulout (large congregation) areas of walrus and their young calves. While these threats are currently considered low, they are expected to accelerate over the next decade. As the climate continues to change, and more and more humans move in, these factors may also interfere with foraging, affect energy expenditures, impair thermoregulation and enhance stress levels.

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WOOD TURTLE (Glyptemys insculpta)

COSEWIC Status: Threatened IUCN Red List Status: Endangered

Wood turtles are semiaquatic freshwater turtles that inhabit both riparian (along the banks of rivers) and terrestrial habitats. As a long-lived species with a late sexual maturity, they are vulnerable to population

changes, so any adult mortality above the natural rate can dramatically cause population declines.

The wood turtle faces nine of the eleven threat categories

listed in its

COSEWIC Status Report. While some threats on their own have an overall low impact, together they result in an overall high threat level for the species in Canada. They are most impacted by agriculture and transportation corridors, both of which cause habitat loss and direct mortality. But they're also subject to illegal collection for the pet trade, forest harvesting, changes in stream flow, floods and native wildlife who attack the turtle's eggs.

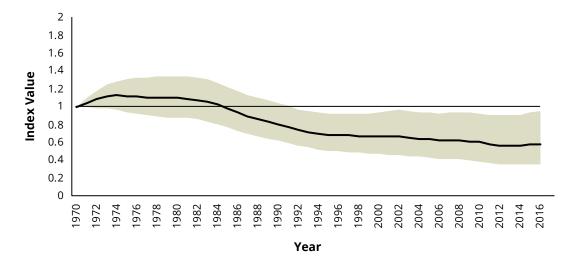


GLOBALLY ASSESSED AT-RISK SPECIES

IUCN lists over 100 globally threatened vertebrates with ranges in Canada, including iconic species such the Atlantic puffin and Atlantic walrus. Using available data for 51 species, the Canadian Living Planet Index (C-LPI) for globally assessed at-risk species shows that **populations living in Canada have declined by 42 per cent, on average, since 1970.**

Calculated by looking at species listed on the IUCN Red List of Threatened Species — the most comprehensive source of information on the global conservation status of biodiversity — this trend means that abundance and extinction risk for the same species can be different at national and local levels. While COSEWIC-assessed

species were anticipated to be in decline, species in Canada that are "threatened" on the IUCN Red List could still be faring well within the country but poorly around the globe. However, our findings suggest species at risk of global extinction are also declining in Canada.



The C-LPI of globally assessed at-risk species living in Canada shows an average decline of 42 per cent (confidence interval range: -64 to -5 per cent) between 1970 and 2016. Trend in population abundance for 316 population time-series of 51 native vertebrate species.

VANCOUVER ISLAND MARMOT (Marmota vancouverensis)

COSEWIC Status: Endangered
IUCN Red List Status: Critically Endangered

The Vancouver Island marmot is a ground squirrel only found on Vancouver Island, British Columbia.

As an endemic species not found anywhere else in the world, Canada is solely responsible for ensuring its survival.

Endemic species are often endangered and protecting them is vital to conserving an ecosystem's genetic diversity. Current threats to Vancouver Island marmots, including predation and ecosystem modification, increase the risk of extinction for a species with already small population numbers and naturally restricted ranges.

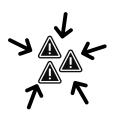
To date, a variety of recovery actions have been undertaken to increase population abundance and achieve recovery objectives, including research and monitoring; habitat restoration, protection and stewardship; and captive breeding and reintroductions. Yet the species remains vulnerable to extinction, with only approximately 200 individuals left as of 2019.



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ATLANTIC PUFFIN (Fratercula arctica)



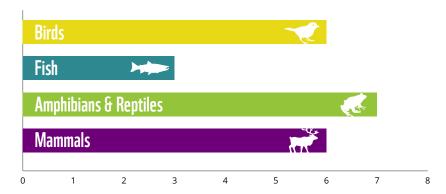


ADDRESSING SINGLE THREATS WON'T WORK

A recent UN report revealed that an estimated one million species around the world are now threatened with extinction. Multiple threats to biodiversity — and associated ecosystem goods and services like clean air and water, which humanity relies upon — are pervasive in Canada and around the world.

Our research has shown that nationally assessed atrisk species in Canada face an average of five threats, with some variation among taxonomic groups. These threats are often cumulative or synergistic and may have cascading effects. Simple causal threat relationships often cannot be assumed due to the many, compounding threats that species now face. Consequently, conservation actions that solely address individual threats are likely inadequate to effectively reverse biodiversity loss.

We need to address a variety of biodiversity threats such as habitat loss, overexploitation, industrial pressures and, increasingly, climate change. If done in concert, and with multiple benefits in mind, our actions to increase at-risk wildlife populations can work to reverse biodiversity loss and address climate change.



Number of threats impacting COSEWIC-assessed at-risk species in Canada.





NEW APPROACHES THAT TACKLE MULTIPLE THREATS

Conservation strategies need to embrace systematic and multifaceted approaches that tackle both biodiversity loss and climate change at the same time. One way to do this is through nature-based climate solutions — like protected areas and restoration — which help stop wildlife loss by addressing multiple threats to biodiversity while also mitigating climate change by sequestering carbon in natural ecosystems.



PROTECTED AREAS AND MANAGEMENT OF CARBON STORES

Protected areas are a cornerstone of wildlife conservation and are increasingly referenced as nature-based climate solutions to avoid conversion or degradation of natural carbon stores. As of 2019, 12.1 per cent of Canada's land and freshwater has been conserved, including 11.4 per cent in protected areas. In addition, 13.8 per cent of marine waters have been conserved, including 8.9 per cent in protected areas. The government of Canada has recently expanded on current targets for protected areas — committing to 25 per cent of land and oceans protected or conserved by 2025 and 30 per cent by 2030 — which aligns with international recommendations for higher protected area targets.

In 2019, <u>WWF-Canada's Wildlife Protection Assessment</u> looked at the ecological representation of Canada's current protected areas network and found that the

wide variety of physical habitats wildlife need are not protected. In fact, three quarters of physical habitats in Canada are inadequately or not at all protected. Globally, it appears that protected areas have been established in areas that are politically viable — such as those with low agricultural value or fishing and shipping pressures, or ones that have recreational or aesthetic value — as opposed to systematically prioritizing areas that would benefit wildlife the most.

To maximize the benefits of protected areas, we need to focus on designating and managing areas of high importance for wildlife as well as carbon storage and sequestration. One way to do this is to elevate the importance, number and sovereignty of Indigenous Protected and Conserved Areas (IPCAs).

INDIGENOUS PROTECTED AND CONSERVED AREAS

"Lands and waters where Indigenous governments have the primary role in protecting and conserving ecosystems through Indigenous laws, governance and knowledge systems," as described by the Indigenous Circle of Experts, are collectively known as Indigenous Protected and Conserved Areas (IPCAs).

These include a variety of initiatives including Tribal Parks, Indigenous Protected Areas, Indigenous Conserved Areas and Indigenous Cultural Landscapes, some of which count towards Canada's protected area targets. While IPCAs vary with respect to governance approaches and management objectives, they generally have three key elements in common: Indigenous-led; long-term commitment; and elevation of Indigenous rights and responsibilities.

INDIGENOUS-LED CONSERVATION



BY ELI ENNS

PRESIDENT AND CEO, IISAAK OLAM FOUNDATION, TLA-O-QUI-AHT NATION CO-CHAIR, INDIGENOUS CIRCLE OF EXPERTS

"Protected areas are important, but not sufficient on their own. We are pioneering a new way of thinking about nature conservation through IPCAs. It's about sound economic development and utilizing Indigenous knowledge systems and the best of western science and modern technology to design and develop comprehensive, integrated community and ecosystem health and well-being models.

The way conservation in Canada has been done to date still follows a model of disconnectedness. We put a fence

around nature over here, but in another part of the same watershed, we create a sacrifice zone for industry, and in yet another part, we have a community where nature is the backdrop to people and built environments. In our approach, all of these things need to be interconnected. That's the idea of *hishuk'ish tsawalk*, which means "everything is one and everything is connected" in Nuu-Chah-nulth.

Imagine a constellation of IPCAs across the country. That's where we need to go."

TRUMPETER SWAN (Cygnus buccinator)

© Lindsay Ohlert



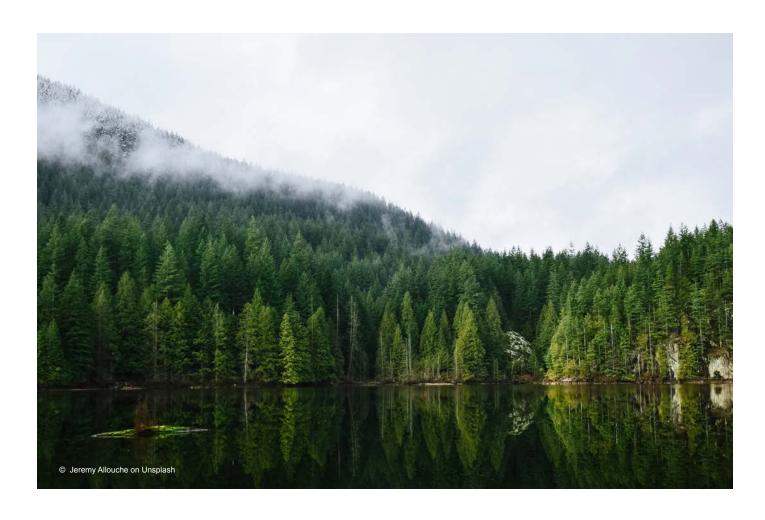
ECOLOGICAL RESTORATION OF DEGRADED AREAS

Globally, over three-quarters of the Earth have been modified by human activity. Degraded landscapes and seascapes should be revitalized so that they provide habitat for wildlife and actively sequester carbon.

In Canada, forests, wetlands, grasslands, built-up regions where human populations are high, and coastal ecosystems could all benefit from large-scale restoration — particularly in southern Canada where human footprint is high. Rapid ecological restoration of native species can offset environmental degradation and can help to recover at-risk species. At a large scale, restoration can create conditions for natural carbon sequestration while providing habitat for wildlife.

Habitat restoration can also provide ecosystem services such as cultural benefits, water purification, pollination, and climate change mitigation and adaptation. By repairing the damage humans have done to terrestrial and coastal ecosystems, restoration can serve as a dual solution to both biodiversity loss and climate change through the creation and enhancement of healthy, carbon-storing ecosystems.

To underscore the biodiversity and climate benefits of ecological restoration, the United Nations General Assembly has proclaimed the upcoming decade (2021–2030) as the Decade on Ecosystem Restoration. The UN Decade on Ecosystem Restoration reinforces that preventing, halting and reversing the degradation of ecosystems around the world is fundamental to achieving numerous Sustainable Development Goals, and can be done in a relatively cost-effective manner.



CONCLUSION: MOVING FORWARD

Canada has an important opportunity to provide global leadership — not only to demonstrate much-needed ambition, but also to show the world how new, integrative approaches to wildlife recovery and climate change mitigation can be achieved through nature-based climate solutions and Indigenous-led conservation.

This includes effective protected areas planning and management that are targeted to prevent the further loss of key habitats for wildlife populations and conversion of important carbon storage areas. This should happen alongside broad-scale restoration of degraded ecosystems for the recovery of species at risk and active sequestration of carbon from the atmosphere. These actions need to be guided by both Indigenous knowledge and scientific knowledge, with each applied where appropriate to deliver the greatest overall positive impact for wildlife, climate and people.

It is no small task, but it is our shared responsibility to take the necessary actions to reverse the trends of wildlife loss in Canada.





IT IS OUR SHARED RESPONSIBILITY TO TAKE THE NECESSARY ACTIONS TO REVERSE THE TRENDS OF WILDLIFE LOSS IN CANADA





